May 7, 2003

RE: Administrative Rules for Stream Alterations

Dear Interested Party:

The Division of Water Rights is contemplating enacting Administrative Rules for Stream Alterations. The impetus for the proposal is to better define the jurisdictional area of a Natural Stream and provide some general guidelines for certain types of Stream Alterations. We are requesting your input concerning the proposed rules. Comments should be directed to Charles Williamson, (801) 538-7404 or Daren Rasmussen, (801) 538-7377 by June 30, 2003.

Section 73-3-29 directs the State Engineer to approve an Application to Alter a Natural Stream unless the proposal

1) Will impair vested water rights

2) Unreasonably or unnecessarily affect any recreational use or the natural stream environment.

3) Unreasonably or unnecessarily endanger aquatic wildlife.

4) Unreasonably or unnecessarily diminish the channels ability to conduct high flows.

Given the preceding criteria by which a proposed Stream Alteration must be judged it becomes apparent that the Natural Stream must include an area larger than what would be represented by the portion of the channel which is physically conveying the flowing water. Not only is the spatial extent of the channel in question, but there are also temporal issues which may come into play as the geomorphology of the channel adjusts over time, particularly during the lifetime of the proposed alteration. This ever changing characteristic of a stream makes the evaluation of a proposed alteration, at a point, impossible since any significant changes impact the natural channel both upstream and downstream.

The attached draft rules attempt to better define the jurisdictional area involved with a natural stream given the current land use, historical impacts on the stream systems, and the desire to perpetuate the attributes of a natural stream to the extent possible.

Your comments on the proposed rules would be appreciated.

Sincerely,

Jerry D. Olds, P.E.
State Engineer

R655. Natural Resources, Water Rights.

R655-13. Administrative Rule for Stream Alteration.

R655-13-1. Authority.

(1) The following rule is established under the authority of Section 73-3-29. Additional procedures may be required to comply with other governing state statute, federal law, federal regulation, or local ordinance.

R655-13-2. Purpose.

(1) The purpose of this rule is to clarify the procedures necessary to obtain approval by the state engineer for any project that proposes to alter a natural stream within the state of Utah.

R655-13-3. Applicability.

(1) These rules apply to all stream alteration projects within the state of Utah.

R655-13-4. Definitions.

(1) Alteration: To obstruct, diminish, enhance, destroy, alter, modify, relocate, realign, change, or potentially affect the existing condition or shape of a channel, or to change the path or characteristics of water flow within a natural channel. It includes processes and results of removal or placement of material or structures within the jurisdiction delineated in this rule.

(2) Bankfull Discharge: The flow corresponding to the elevation of the water surface, in a natural stream, just where overflowing onto the flood plain begins.

(3) Bank(s): The confining sides of a natural stream channel, including the adjacent complex that provides stability, erosion resistance, or aquatic habitat.

(4) Bar: An accumulation of deposited sand, gravel, or other material formed in the channel, along the banks, or at the mouth of a stream where a decrease in velocity induces deposition and may itself induce additional deposition.

(5) Bed: The bottom of a natural stream channel.

(6) Canopy: Mature riparian woody vegetation, usually referring to limb and leaf overhang that provides an important function in the natural stream ecosystem.

(7) CFS: Cubic Feet per Second (cfs) is a volumetric flow measurement of liquid.

(8) Channel: The bed and banks of a natural stream.

(9) Clearance: The vertical distance between a given water surface and the lowest point on any structure crossing a natural stream.

(10) Ecology: A branch of science concerned with the interrelationship of organisms and their environment.

(11) Ecosystem: The assemblage of organisms and their environment functioning as an ecological unit in nature.

(12) Flood Plain: The maximum area adjacent to a channel that will accommodate water when flow exceeds bankfull discharge.

(13) Flowline: The lowest part of a streambed when viewed in cross-section.

(14) Fluvial: 1: Of, relating to, or living in a stream or river. 2: Produced by stream action.

(15) Gradient: Elevation change per unit length.

(16) Meander Belt Corridor: The zone where a meandering stream shifts its channel from time to time; specifically, the area of the flood plain included between two lines drawn tangentially to the extreme limits of the banks at the extreme limits of all active or historic meanders.

(17) Municipality: A city of the first class, city of the second class, city of the third class, or a town as classified in Section 10-2-301 of the Utah Municipal Code.

(18) Municipal Natural Stream Systems: Stream systems that exist within the boundaries of a municipality.

(19) Natural Stream: Any waterway, along with its fluvial system, that receives sufficient water to sustain an ecosystem that distinguishes it from the surrounding upland environment.

(20) Other Natural Stream Systems: Stream systems that are located on United States Government, Utah State, or Native American Tribal owned or administered lands.

(21) Revegetation: The planting of salvaged plants, containerized plants, cuttings, seeds, or other methods to produce a desired plant community.

(22) Riparian Corridor: The vegetation zone associated with a natural stream environment.

(23) Rip Rap: Hard, well graded, preferably angular rock, sufficient in size to remain stationary during flood flows.

(24) State Engineer: Director of the Utah Division of Water Rights.

(25) Unincorporated Natural Stream Systems: Stream systems that lie outside municipal limits and are located on lands not owned or administered by the United States Government, the Utah State Government, or a Native American Reservation.

(26) Waterway: A topographical low that collects and conveys water.

R655-13-5. Jurisdiction.

(1) The jurisdictional limitations of the subject rule are as follows:

(a) Unincorporated Natural Stream Systems.

(i) Within unincorporated natural stream systems the jurisdictional area is equal to the meander belt corridor observed in a relatively undisturbed reach of the stream. All projects that propose development within this area will require an approved stream channel alteration application.

(b) Municipal Natural Stream Systems.

(i) Within municipal natural stream systems the jurisdictional limit is the greatest of the following, but may be increased or decreased at the discretion of the state engineer depending upon investigation results:

(A) Observed riparian or canopy drip line of an undisturbed reference reach; or

(B) Two times the bankfull width from the bankfull edge of water in a direction perpendicular to flow and away from the channel up to a maximum of 30 feet.

(ii) All projects that propose development within this area will require an approved stream channel alteration permit.

(c) Other Natural Stream Systems.

(i) Within other natural stream systems the state engineer will determine the jurisdictional limit.

R655-13-6. Application Requirements.

(1) Blank application forms are available through the Division of Water Rights or on the Division's web site (http://www.waterrights.utah.gov). In addition to the information requested on the application hereby incorporated by reference, the following information shall be submitted with the application if applicable:

(a) A rehabilitation plan for areas disturbed during construction activities;

(b) Hydraulic calculations on which the design of the proposed alteration is based;

(c) A description of the construction methods to be employed; and

(d) Any other information the state engineer determines is necessary to evaluate the proposal.

(2) Incomplete applications will be returned to the applicant.

R655-13-7. Specific Stream Alteration Activities.

(1) The following subsections address specific types of stream alteration activities and the nature of special information that shall be provided to the state engineer. These sections are not intended to be comprehensive in nature and other requirements may be imposed at the discretion of the state engineer.

(a) Utility Crossings.

(i) Applications that propose to install a utility (sewer, water, fiber optic cable, etc.) beneath a natural stream will be subject to the following conditions and requirements:

(A) Applicants will be required to explore the utilization of directional drilling or jacking methods where year-round flows exist. Where directional drilling or jacking is not feasible, the applicant will be required to submit geotechnical evidence or other rationale justifying an exception, along with detailed plans showing how flow will be diverted away from the area (use of coffer dams, temporary culverts, etc.) during construction.

(B) Trenching will be considered in streams that flow periodically provided that at the time of trenching no flow exists and the stream channel can be returned to its pre-trenching state.

(C) Bedding and backfill material placed over and around the utility shall not be more free draining than adjacent stream bed, bank, and riparian area materials and shall be compacted to in-place densities at least as great as those of similar adjacent materials. In some circumstances cutoff collars may be required.

(D) Utility crossings under natural streams shall be placed with the top of the utility a minimum of three (3) feet below the existing

natural elevation of the streambed. In some instances, a greater depth may be required if there is significant evidence of on-going streambed erosion.

(E) Where utility crossings occur on river bends or areas of significant, on-going bank erosion, the utility shall be kept at an elevation below that of the bed of the stream to a distance laterally away from the stream where erosion will not expose the utility at a later date.

(b) Bridges and Other Spans.

(i) Applications that propose to span natural streams by way of bridges or other structures will be subject to the following conditions and requirements:

(A) Submission of consideration for the use of existing stream crossings as an alternative to construction of a new bridge or span.

(B) Construction of bridge or other span abutments shall not encroach on the bankfull stage of a natural stream.

(C) Clearance of the lowest part of the span shall be a minimum of four (4) feet above bankfull stage.

(c) Culverts.

(i) Applications that propose installation of a culvert or other similar structures will be subject to the following conditions and requirements:

(A) The applicant shall submit evidence to justify the infeasibility of constructing a bridge crossing.

(B) The grade and elevation of the bottom (or floor) of the culvert shall not change the profile from that of the original undisturbed streambed, unless the culvert is intended to be used as a fish barrier.

(C) The bottom of the culvert should contain natural streambed material if the natural stream contains a fishery. This may require installing the culvert flowline below the bed of the channel or installation of an open bottom culvert.

(D) The culvert shall be sized to allow passage of high flows and in some cases wildlife migration and contain energy dissipation structures or devices.

(E) The culvert design should include energy dissipation structures when necessary.

(d) Vegetation Removal or Thinning.

(i) Applications, which propose to remove or thin out living riparian vegetation, will be considered if:

(A) the existing riparian vegetation consists exclusively or predominantly of non-native plant and tree species, provided that removal or thinning will not jeopardize the stability of the streambed or banks; or

(B) the existing vegetation represents a significant flood threat to existing buildings or other permanent structures, residential areas, transportation routes, or established utilities.

(C) Dead vegetation within the channel may be removed without written authorization from the state engineer provided that removal can be accomplished by way of manual methods.

(e) Storm or Waste Water Outfall.

(i) Applications proposing to discharge storm water or waste water into a natural stream channel shall include plans for treating the water prior to discharge (debris box, skimmer, or other appropriate method for removing debris or any other pollutant or constituent which will impair the ecosystem health of the receiving channel) when water originates from areas containing potential waste or contaminants. Debris boxes shall be cleaned or otherwise serviced regularly. Outfall structure design shall include methods for reducing water velocities and preventing erosion (keyed-in rip rap, flared end-section, baffles, etc.).

(f) Stream Channel Relocation.

(i) Applications proposing to relocate a natural stream channel will be considered if:

(A) the existing channel location is not the historic or prehistoric natural channel and relocating the channel will enhance the natural stream environment; or

(B) the existing channel location represents a significant hazard to existing permanent preexisting structures, residential areas, transportation routes, or established utilities; and other bank stabilization methods can be shown to be inappropriate or infeasible for reducing or eliminating the hazard.

(ii) Applicants will be required to submit detailed drawings of the new channel (plan, cross-section(s), and profile views) and vegetation plans for the areas adjacent to the new channel. Monitoring of planted vegetation must be conducted and success reported to the Division of Water Rights.

(g) Beaver Dam Removal.

(i) Removal of beaver dams may be considered if:

(A) the dam(s) interfere with the operation or maintenance or threaten the structural integrity of a bridge, culvert, an authorized man-made dam, or an authorized water diversion works; or

(B) the presence of the dam(s) causes or may reasonably be expected to cause flooding of pre-existing developed areas, buildings, transportation corridors, or established utilities; or

(C) the dam(s) exist in areas of highly erosive soil or recently authorized stream restoration activities.

(ii) Removal of established beaver dams for the sole purpose of obtaining impounded water to supplement other water sources will be reviewed critically.

KEY: administrative, rule, stream, alteration

April 7, 2003